

What every regulated pool owner, operator, builder, and designer needs to know to comply with the *Virginia Graeme Baker Pool and Spa Safety Act* 



### Contents

Message from the Department of Health	Page 1
Key Elements of the New Federal Law	Page 2
Summary of Federal and State Requirements	Page 3
Questions and Answers	Page 4-5
1. What is a main drain?	Page 4
How do I find the new cover I need? What do I need to know to get the right replacement?	Page 4
3. I've installed a manual emergency shut-off switch and alarm system in our single-drain pool to meet state pool rules. Do I need to do anything else?	Page 4
4. I've installed a safety vacuum release system and alarm in our single-drain pool to meet entrapment prevention requirements in the state rules. Is our pool in compliance with the new federal law for additional entrapment prevention systems?	Page 5
5. Can I just fill in my main drain?	Page 5
6. What if I am unable to comply with the new federal law by the deadline of December 19, 2008?	Page 5
7. Will I need to show compliance with the new federal law? Should I keep specific records to verify the products we have installed?	Page 5
Designer and Builder Information	Page 6-9
Replacing Drain Covers in Existing Water Recreation Facilities	Page 6
Design Submittals for Plan Review	Page 7
Construction Reports & Documenting Compliance with the Federal Law	Page 7
Important Design Elements for Existing & Future Facilities	Page 7-8
Entrapment Prevention Options Approved by the Federal Law & Washington State	Page 9
Web Resources and Contacts for Water Recreation Facility Plan Review	Page 9

Pool Main Drain Safety - Guidance for Complying with the New Federal Law DOH 333-160 February 2009

The Department of Health is an equal opportunity agency. For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TTY 1-800-833-6388). For additional copies of this publication, call 1-888-586-9427.

# Pool Main Drain Safety Guidance Message from the Department of Health

In December 2007, the federal government passed the *Virginia Graeme Baker Pool and Spa Safety Act*, which mandates include increased protection against entrapment hazards related to main drains. This federal law establishes new safety requirements for water recreation facilities, including those public facilities regulated by the Washington State Department of Health and local health jurisdictions.

Effective December 19, 2008, the new federal law requires:

- ➤ All public facilities to install new drain covers that meet the new safety standards.
- All public facilities with single main drains to install additional entrapment prevention equipment that complies with federal law.

Our intent for this guidance document is to promote understanding of the new federal law. It discusses general requirements and some design and construction issues to address when complying with the new federal law and existing state rules.

Preventing entrapment in water recreation facilities is a major focus of the new federal law, with requirements for upgrading safety equipment. However, even with new safety equipment, a critical element of daily pool operation is to inspect the condition of submerged suction covers and other fittings. If the cover is missing, loose or cracked, or pieces of cover are missing, pool operators and owners are expected to immediately close the pool until repairs are made. Missing or broken covers are a leading cause of serious entrapment injuries that can occur in water recreation facilities.

The Department of Health is working closely with the U.S. Consumer Product Safety Commission (the federal agency implementing the new federal law), other states' water recreation programs, and pool industry representatives to identify and respond to the wide range of technical and policy issues relating to the new federal law.

We cannot foresee every possible scenario that may come up regarding the implementation of the new federal law. Further clarifications will be needed as new information emerges. At this point, we are sharing our current understanding, based on our communication with the Consumer Product Safety Commission.

For many years the Washington State pool safety standards have addressed the potential hazards of hair, limb, and body entrapment. For example, the requirement for dual main drains was established in 1988 for waterpark facilities and in 1990 for all other pools. Rule amendments in 2004 established that facilities with single main drains must install an emergency manual shut-off switch and audible alarm, or other entrapment prevention options, by June 2008.

We are thankful for the work you've done in the past to meet state safety standards and we appreciate your efforts in complying with the new federal law. We hope you find this guidance document informative and useful.

Nancy Napolilli, Director Office of Environmental Health and Safety

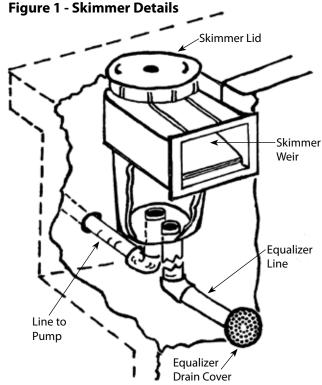
Gary Fraser, Manager Water Recreation Program

## Key Elements of the New Federal Law

- New federal law applies to all water recreation facilities (WRFs) regulated by state and local health departments through the Washington Administrative Code, Chapters 246-260 Water Recreation Facilities and 246-262 Recreational Water Contact Facilities. This includes facilities that currently exist, those under construction, and facilities in plan development or plan review.
- Beginning December 19, 2008, all WRFs must install drain covers that meet the product performance standard titled "Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs," ASME A112.19.8-2007.
   The standard establishes minimum design and performance criteria to address the potential for hair, limb, and body entrapment. It is likely that the existing drain covers in your facility will NOT meet this new standard.
- 3. ASME A112.19.8-2007 is a complex standard and addresses many design, material, and product performance elements. Designers and builders are encouraged to obtain a copy of ASME A112.19.8-2007 and become fully aware of how federal law adoption of this standard will impact their future WRF projects. The standard is available at <a href="http://catalog.asme.org/Codes/PrintBook/A112198">http://catalog.asme.org/Codes/PrintBook/A112198</a> 2007 Suction Fittings.cfm.
- 4. The new federal requirement for replacing drain covers applies to all submerged suction outlets, including those on the sides of your pool. If your facility has equalizer line outlets (see Figure 1), typically part of the skimmer system, they present an entrapment hazard when the pool water level drops below the level of the skimmers.
  For more information about replacing covers on outlets on Figure 1 Skimmer Details

the side of your pool, see page 8.

- 5. Proper selection of replacement covers is critical to assure that the cover and the underlying suction outlet drain sump are "matched." Failure to select matching equipment will reduce the safety of the new cover, leading to a false sense of safety, and fail to comply with the new federal standard.
- 6. Proper installation of replacement covers is critical to assure that the new cover will remain securely attached while in use. Failure to use the correct fittings and fasteners will jeopardize safety, should covers come loose. You are encouraged to have the new main drain cover and necessary supporting components (fasteners, installation frames or brackets, etc.) installed by a pool professional who understands the new federal law and the ASME A112.19.8-2007 standard.
- 7. To comply with the new federal law, all WRFs with single main drains must install additional entrapment prevention equipment. There are several options that meet federal law and state requirements. See Single Main Drain Guidance at <a href="https://www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf">www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf</a> for more information.



- 8. The work needed in your pool to comply with the new federal law may require plan review and approval before you perform the work. The new technical design standards established by the new federal law will be applied by plan review agencies in Washington State.
  - If your facility is in **Clark, King, Pierce, Snohomish, or Spokane counties**, contact your local health jurisdiction about what compliance work will require plan review and approval. For all other counties, plan review and approval is done by the Department of Health. See page 9 for contact information.

# Summary of Federal and State Requirements

Design Elements	Federal Requirements <sup>1</sup>	State Requirements
All Main Drains		
All main drain covers must meet ASME A112.19.8-2007 by 12/19/2008.		
➤ Covers on submerged suction outlets, including equalizer lines, must also meet the ASME A112.19.8-2007.	•	
➤ Maximum velocity across drain cover	◆ May exceed 1.5 fps	Must not exceed 1.5 fps <sup>2</sup>
➤ Main drains must include a sump meeting dimensional and flow characteristics.	•	
➤ Sumps need to provide a minimum distance between the bottom of the cover and the closest location of the piping coming into the sump, equal to at least 1.5 times the diameter of the pipe (see Figure 4), or meet the minimum dimensions established by the cover manufacturer.	•	
➤ Cover must be securely fastened to the sump.	<b>♦</b>	Yes
Single Main Drains		
Single main drains must have additional entrapment prevention beginning 12/19/2008.	0	
Additional protective measures include:		
➤ Safety Vacuum Release Systems		Allowed
➤ Suction Limiting Vent Systems		Allowed
➤ Gravity Drainage Systems		Allowed
➤ Unblockable drain		Allowed with Conditions <sup>3</sup>
➤ Automatic shutoff without vacuum release		Allowed with Conditions <sup>4</sup>
➤ Drain disablement (no main drain)	0	Allowed with Conditions <sup>5</sup>
➤ Manual shut-off switch and audible alarm	<ul> <li>Not acceptable</li> </ul>	Minimum requirement
Multiple Main Drains		
Multiple main drains required at all new facilities.		Yes
Drains spaced less than 3 feet apart require additional entrapment prevention measures.	•	
Multiple main drains will need design analysis to assure hydraulic balance.	•	
<b>KEY:</b> ■ = New Federal Law • = CPSC Interpretation • = ASME.	A112.19.8-2007 Standard	

<sup>&</sup>lt;sup>1</sup>Federal Requirements come from three related sources: the text of the legislative bill or the law, the interpretations of the Consumer Product Safety Commission (the agency identified by the law to implement the law), and the ASME standard, which is referenced in the law and establishes the standards that apply to the design, materials, and performance of outlet drain covers and other entrapment prevention devices and systems. Collectively, these items present the new federal requirements. The specific source of the requirements is indicated by different symbols. A key is provided at the bottom of the table.

<sup>&</sup>lt;sup>2</sup>Variances to the state rule may be considered for existing facilities due to the conflict that exists between the state rules and the flow rate allowances in the *ASME A112.19.8-2007* standard.

<sup>&</sup>lt;sup>3</sup>Unblockable drain covers are not allowed when used alone, without other entrapment prevention measures. They may be used in Washington State when used with an automatic or manual emergency shut-off switch and alarm, or one of the other entrapment prevention measures allowed in Washington. Use, design, and installation requirements for entrapment prevention systems or equipment approved for Washington State are in *Guidelines for Pools with Single Main Drains*: <a href="https://www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf">www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf</a>.

<sup>&</sup>lt;sup>4</sup>Automatic shut-off without vacuum release may be used in Washington State only when combined with an audible alarm and an unblockable drain. Use, design, and installation requirements for entrapment prevention systems or equipment approved for Washington State are in *Guidelines for Pools with Single Main Drains*: www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf.

<sup>&</sup>lt;sup>5</sup>Drain disablement in existing facilities, and developing new facilities without main drains, may be used in Washington State only when the potential impact for decreased water quality and water clarity are addressed and a variance from the requirements for dual drains is obtained. This will require analysis of recirculation flow patterns in the facility and may require design and system modifications to maintain water quality and water clarity. Use, design, and installation requirements for entrapment prevention systems or equipment approved for Washington State are in *Guidelines for Pools with Single Main Drains*: <a href="https://www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf">www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf</a>.

#### 1. What is a main drain?

**ANSWER:** The new federal law defines a main drain as a submerged suction outlet typically located at the bottom of a pool or spa to conduct water to a recirculating pump. The Consumer Product Safety Commission (CPSC) interprets "main drain" to include all suction outlets in a pool or spa, regardless of their location on the side or bottom of the pool. Main drains meeting the federal safety standards consist typically of four parts: a cover, a mounting frame, a sump, and specific fasteners to assure that the cover is securely attached to the sump. See Figure 2 for a drawing of a typical main drain.

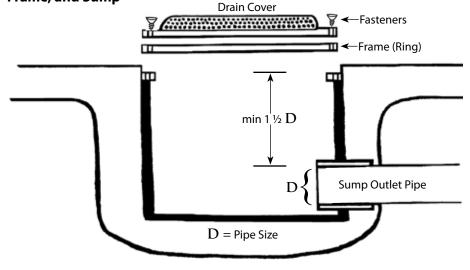
#### 2. How do I find the new cover I need? What do I need to know to get the right replacement?

**ANSWER:** To purchase a replacement cover that will properly fit your existing main drain system, the equipment supplier will need to know a few things about your pool's recirculation system and the existing main drain suction outlet. Information for your supplier includes: 1) the maximum flow rate of the pool's recirculation system, 2) the manufacturer and model numbers of the existing recirculating pump and motor, main drain cover and sump; and, 3) the location of the main drain (on the pool bottom or sidewall). A sketch of the existing drain sump, with dimensions that identify the overall sump size and the shortest distance between the sump outlet pipe and the underside of the existing drain cover will be useful. Turn off all pumps when working on the main drain(s). If drain cover is removed, securely refasten before reopening the pool and inspect the cover condition daily.

See Figure 2 showing the measurement from sump outlet pipe to the bottom of the drain cover. This information will be needed to select a replacement cover that: 1) meets the ASME A112.19.8-2007 standard, 2) will handle the system recirculation flow; and, 3) will properly fit the existing main drain outlet sump. For more information about selecting approved replacement covers, see <a href="https://www.cpsc.gov/BUSINFO/vgb/draincman.html">www.cpsc.gov/BUSINFO/vgb/draincman.html</a>.

**Note:** If your pool does not have a sump underneath the main drain cover, you will need to contact a pool designer and a pool equipment supplier for their services in designing and selecting the correct main drain outlet (cover

Figure 2 - Drain Outlet Details Showing Cover, Fasteners, Frame, and Sump



and sump) that will integrate effectively into your facility recirculation system. This work will require plan review and approval by your local or state health department. See page 9 for contacts regarding facility plan review.

### 3. I've installed a manual emergency shut-off switch and alarm system in our single-drain pool to meet state pool rules. Do I need to do anything else?

**ANSWER:** Unfortunately, the options available in the federal law for additional entrapment prevention equipment do not include a manual shut-off switch and alarm. You will need to select one of the options that meet both the federal law and state requirements. One option is to install an "unblockable" drain meeting the *ASME A112.19.8-2007* standard in conjunction with the existing manual emergency shut-off switch and alarm. For more information about entrapment prevention options approved by the federal law and Washington State requirements, see page 9.

4. I've installed a safety vacuum release system and alarm in our single-drain pool to meet entrapment prevention requirements in the state rules. Is our pool in compliance with the new federal law for additional entrapment prevention systems?

**ANSWER:** Yes, most likely. If the safety vacuum release system and alarm was installed according to guidelines from the Department of Health (including manufacturer's instructions for installation), and meets the requirements established by your local health jurisdiction, your facility is in compliance with the federal law for additional entrapment prevention. You will need to verify to your local health jurisdiction that the equipment and its installation meet the Department of Health requirements. See *Single Main Drain Guidance* at <a href="https://www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf">www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf</a>. Remember, the drain cover will still need to be replaced with a drain cover meeting the *ASME A112.19.8-2007* standard.

5. Can I just fill in my main drain? The information I've seen from CPSC encourages that approach.

**ANSWER:** The CPSC does encourage this approach as the most effective way to prevent entrapment. Without suction outlets in a pool, the potential for entrapment is eliminated. Disabling main drains may, however, impact water circulation patterns in the pool, resulting in poor water quality and reduced water clarity, creating a different set of health and safety hazards. The operational issues that must be addressed when disabling existing main drains, and the design requirements when planning new facilities without main drains, have been established in guidelines developed by the Department of Health. See *Single Main Drain Guidance* at <a href="https://www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf">www.doh.wa.gov/ehp/wr/guidance-singlemaindrain.pdf</a> for more information.

6. What if I am unable to comply with the new federal law by the deadline of December 19, 2008?

**ANSWER:** The CPSC, the federal agency responsible for enforcing this new law, expects owners and operators to comply with the new federal law as soon as equipment becomes available for their facility. The CPSC may impose civil or criminal penalties on facilities that do not comply with the federal law. CPSC has stated, however, that they are aware that it will take some time to:

- ✓ Determine just what equipment is needed for your facility.
- ✓ Locate and obtain the equipment meeting the new federal law,
- ✓ Obtain plan review if required, and
- ✓ Arrange for installation by skilled personnel with knowledge of the ASME A112.19.8-2007 standard.

Owners and operators are advised by CPSC to be diligent in their effort to comply with the new federal law and maintain a brief written record of their efforts to obtain the right equipment for their facility and to arrange for professional installation services. See <a href="https://www.cpsc.gov/BUSINFO/vgb/draincman.html">www.cpsc.gov/BUSINFO/vgb/draincman.html</a> for information about selecting equipment.

7. Will I need to show compliance with the new federal law? Should I keep specific records to verify the products we have installed?

**ANSWER:** Yes, facility owners and operators will need to have information readily available that verifies compliance with the new federal law and Washington State requirements. Contact your local health jurisdiction for specific information they require, see <a href="https://www.doh.wa.gov/LHJMap/LHJMap.htm">www.doh.wa.gov/LHJMap.htm</a>. The Department of Health will have information about verification on our Web site, <a href="https://www.doh.wa.gov/ehp/wr">www.doh.wa.gov/ehp/wr</a>.

### Designer and Builder Information

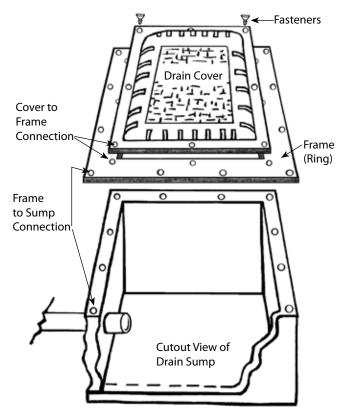
#### Replacing Drain Covers in Existing Water Recreation Facilities

The work needed to comply with the federal law may require plan review and approval before you perform the work. When evaluating an existing facility and selecting replacement drain covers, designers and builders must address various design elements.

The main drain cover or covers selected must:

- ➤ Have been tested by a nationally recognized testing laboratory, such as NSF-International or International Association of Plumbing and Mechanical Officials, and comply with the ASME A112.19.8-2007 standard.
- > Be rated for the maximum flow of the recirculation system (for single and dual drains).
- > Be used consistent with their application and placement rating:
  - > Use in single drain or multiple drain application, and
  - > Placement location (bottom or sidewall).
- ➤ Be installed on an outlet sump (see Figure 4 on page 8) that complies with the ASME A112.19.8-2007 standard.
  - ➤ Ensure the sump provides suitable dimensions to conform to *ASME A112.19.8-2007*. If the existing facility has no sump, select a complete outlet fixture (cover, mounting frame, and sump) that has been tested to meet *ASME A112.19.8-2007*. If the existing sump does not conform to minimum dimensions established in the *ASME A112.19.8-2007*, modify or replace the sump to ensure compliance. See the field fabricated sump design specifications in the *ASME A112.19.8-2007*.
- ➤ Be installed to conform to the fastening requirements in the ASME A112.19.8-2007 standard. See Figure 3 for a drawing of a typical drain outlet.
  - If using an entire outlet (cover, frame, fasteners and sump) from a single manufacturer that has all been tested to meet the ASME A112.19.8-2007 standard, follow the manufacturer's instructions for installation.
  - When working with separate components (for example, a new ASME A112.19.8-2007 compliant cover, with an existing manufactured sump) there is more potential for missing important connection and fastening requirements. Confirm with the

**Figure 3 - Drain Component Details** 



- equipment supplier or manufacturer that the new cover is designed to fit the existing sump. The fastening method and materials used to join the main drain cover to the sump needs to conform to both the cover and sump manufacturer instructions and *ASME A112.19.8-2007* section 2.1. This section of the ASME standard establishes considerable detail about fastener materials, strength, length, and receiving material strength and resilience.
- ➤ When specifying a field fabricated sump, the facility designer must verify that the sump and the specified make and model of main drain cover and mounting frame will conform to the attachment requirements of ASME A112.19.8-2007 section 2.1.

#### **Design Submittals for Plan Review**

So that plans can be reviewed for compliance with the new federal technical design standards and the *ASME A112.19.8-2007* standard, all future plan submittals must include additional information with cross-sectional and plan view details, noting:

- ➤ The piping going into the main drain sump.
- ➤ The dimensional details of the sump, conforming to ASME A112.19.8-2007 section 2.3.4.
- ➤ Branch lines leading from the sump to the pump, with pipe lengths and diameter, demonstrating the dual or multiple drain system is hydraulically balanced between each outlet and between the outlets and the main suction line to the pump.
- > The maximum flow rate of all pumps moving water through the system.
- ➤ That drain cover connection fittings conform to ASME A112.19.8-2007 section 2.1.
- ➤ The rated capacity of the main drain outlet (including the sump) to ensure the flow for the outlet conforms to the maximum flow for the main drain.
- ➤ The number of square inches of open area in the drain cover, and the flow rate (in feet per second) through the cover.
- > The proper application rating of the drain (single or multiple drain use, bottom or sidewall placement).
- ➤ If providing a field fabricated sump, details that the piping and the openings going into the sump to ensure it will handle the maximum flow rate. A field fabricated sump will need to meet the design specified by the design engineer or architect, who takes responsibility to ensure and demonstrate conformance with the ASME A112.19.8-2007 standard.

#### Construction Reports & Documenting Compliance with the Federal Law

Additional detail is needed on the construction report from the designer so that the facility owner or operator can verify compliance with the new federal law. In addition to completing the construction report, the designer should provide documentation that verifies the design information described above in Design Submittals for Plan Review. Photographs that identify the facility and clearly depict construction details are advised so that actual construction of the main drain piping and outlets can be verified.

#### Important Design Elements for Existing & Future Facilities

The following information is provided to alert designers and builders to specific design issues to be addressed while complying with the new federal law and Washington State requirements.

**Drain Cover Flow Rate:** Maximum flow rate velocity on drain covers is 1.5 fps in Washington State rule. While *ASME A112.19.8-2007* allows flow rates that exceed 1.5 fps, new construction in Washington State will need to follow State requirements. For existing facilities working to conform with federal requirements, a variance will be required to exceed State rule.

**Maximum Flow Rate:** According to the CPSC, every main drain and cover on single-drain and dual-drain systems must be rated for 100% of the maximum recirculation system flow rate. This is more restrictive than current state requirements. For multiple drain systems with three or more drains, contact DOH for design specifics. To assure proper selection of covers, accurate determination of maximum flow rate is essential. A document that provides some reasonable guidance on this is the ANSI/APSP #7-2006 American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins. For existing facilities page 16 of that document describes field methods for evaluating maximum flow of existing systems. When developing plans for new construction section 4.4.1 provides some useful options for determining maximum system flow rate.

**Replacing Outlet Covers on Equalizer Lines:** According to the CPSC, all equalizer lines need new covers that meet *ASME A112.19.8-2007*. Until covers intended for this application that meet the *ASME A112.19.8-2007* standard become available, or if one opts to plug the equalizer line, it may be advisable to seek alternative pump protection, such as a remote water level controller. For new facilities, designing equalizer lines to draw from the manifolded main drain pump-return line may be a prudent design choice, instead of terminating on the pool sidewall which draws water from the pool directly.

**Multiple Drain Systems and Hydraulic Balance:** Converting single main drain systems to multiple main drain systems is another acceptable approach to providing additional entrapment prevention for single main drain systems. According to the CPSC, when designing multiple main drain systems to comply with the federal law, establishing hydraulic balance—between each outlet and between the outlets and the main suction line to the recirculation pump—is now a critical design element. To achieve hydraulic balance between multiple drains requires:

- ➤ Locating drain sumps equal distance from a tee at the sump end of the main collector line and rated for the full flow capacity of the recirculation system.
- > Maintaining constant pipe and fitting diameters from the sump to the main collector line.
- Sizing the pipes leading from the sumps to the pump to handle the flow and maintain flow rates below prescribed maximum velocities.

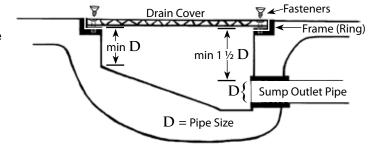
CPSC recommends that multiple drains be located 3 feet to 6 feet apart, measuring between the centerlines of the drain covers. Any design that places multiple drains closer than 3 feet between the centerlines of the main drain covers is identified by CPSC as so similar in entrapment potential to a single drain that additional entrapment prevention systems are required to comply with the federal law.

Designs that place drains greater than 6 feet between the centerlines of the drain covers, will require additional hydraulic analysis and field testing of the drain to assure hydraulic balance. If a designer desires to extend the distance beyond 6 feet, the designer and the plan reviewer will need to work with the CPSC to determine the necessary computations for evaluating the hold down forces on the drains to assure they do not exceed the federal standard.

**Outlet Sumps:** ASME A112.19.8-2007 section 2.3, provides specific design requirements for drain outlets. If the outlet sump is not part of a complete main drain system (cover, frame, and sump) conforming to ASME A112.19.8-

2007, ensure that the sump design conforms with the sump design requirements (see Figure 4) established in ASME A112.19.8-2007 section 2.3.4. If the entire suction outlet (cover, frame, fasteners, and sump) are all one manufactured unit, it will be simpler to determine compliance. If a builder is using a field fabricated sump, additional plan details will be needed to assure compliance with the sump dimensions and fastener requirements of the ASME A112.19.8-2007 standard.

Figure 4 - Sump Details



#### Field-Fabricated Sumps vs. Manufactured Sumps

**and Covers:** Designing main drain systems and specifying manufactured sumps and covers meeting the *ASME A112.19.8-2007* standard is likely a preferred approach. In some instances it may be necessary to field fabricate sumps and to specify a manufactured cover meeting the *ASME A112.19.8-2007* standard. Assuring that this combination meets the *ASME A112.19.8-2007* standard is a designer's responsibility.

#### **Entrapment Prevention Options Approved by the Federal Law and Washington State**

Currently there are several options available that meet both the federal law and Washington State requirements. These include:

- > Safety Vacuum Relief Systems
- ➤ Suction Limiting Vent Systems
- ➤ Gravity Drainage Systems
- ➤ Drain Disablement / New WRF Design without Main Drains
- ➤ Multiple Main Drains

Information about these options is available on the *Guidelines for Pools with Single Main Drains*: <a href="www.doh.wa.gov/ehp/wr/quidance-singlemaindrain.pdf">www.doh.wa.gov/ehp/wr/quidance-singlemaindrain.pdf</a>.

**Special Note about Unblockable Drains:** Placement of an unblockable drain cover on a blockable sump (sump dimensions are less than 18" by 23") will not qualify as an unblockable drain. The federal law allows the use of an "unblockable" drain meeting the *ASME A112.19.8-2007* standard on a single main drain without any additional entrapment prevention equipment. This provision is, however, less protective than current Washington State requirements and policy. National experience with entrapment events all too frequently identify drain cover or fastener fatigue resulting in a broken or missing cover as the major contributor to entrapment-related injury and death. Relying on a cover to provide the sole measure of entrapment prevention, even one of "unblockable" design meeting the *ASME A112.19.8-2007* standard, presents a level of risk that Washington State finds unacceptable.

Washington State requires that all WRFs with single-main drain systems, including those with an "unblockable" drain meeting the *ASME A112.19.8-2007* standard, have additional entrapment prevention equipment. An automatic or manual emergency shut-off switch and alarm, or any of the entrapment prevention approaches mentioned above, will meet the Washington State requirements.

#### Web Resources

#### **Washington State Department of Health**

- ➤ Water Recreation Program Home page: <u>www.doh.wa.gov/ehp/wr</u>
- > Electronic version of this document: www.doh.wa.gov/ehp/wr/quidance-maindrainlaw.pdf
- > Guidelines for Pools with Single Main Drains: www.doh.wa.gov/ehp/wr/quidance-singlemaindrain.pdf
- ➤ Local Health Jurisdiction Finder: <a href="https://www.doh.wa.gov/LHJMap/LHJMap.htm">www.doh.wa.gov/LHJMap/LHJMap.htm</a>

#### **U.S. Consumer Product Safety Commission**

- > Federal "Pool and Spa Safety" Law: www.cpsc.gov/businfo/vgb/pssa.pdf
- > CPSC Interpretation: www.cpsc.gov/businfo/vgb/vgpsa.pdf
- ➤ CPSC Staff's Guide to Complying with the Law: <u>www.cpsc.gov/businfo/vgb/poolspacomply.pdf</u>
- ➤ CPSC Approved Products List: <a href="www.cpsc.gov/businfo/vgb/draincman.html">www.cpsc.gov/businfo/vgb/draincman.html</a>

#### **American Society of Mechanical Engineers**

➤ ASME A112.19.8-2007 Standard: http://catalog.asme.org/Codes/PrintBook/A112198 2007 Suction Fittings.cfm

#### **Aquatics International**

> Pool Spa Safety Act FAQ and Webinar: www.aquaticsintl.com/enewsletter/11alert.html

#### **Contact List for Water Recreation Facility Plan Review**

Clark County, Marty McGinn, 360-397-8428 or marty.mcginn@clark.wa.gov

King County, 206-205-4048 or kcpoolplans@kingcounty.gov

Pierce County, Dave DeLong, 253-798-6499 or <a href="mailto:delong@tpchd.org">delong@tpchd.org</a>

Snohomish County, Mike Young, 425-339-5250 or myoung@snohomish.shd.wa.gov

Spokane County, Steve Main, 509-324-1594 or smain@spokanecounty.org

All other counties, Washington State Department of Health, Gary Fraser, 360-236-3073 or gary.fraser@doh.wa.gov